



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,296	03/08/2001	Scott Alan Stratmoen	NORTH-424A/A	3180

7590 01/02/2004

Terry J. Anderson, Esq.  
NORTHROP GRUMMAN CORPORATION  
1840 Century Park East  
Los Angeles, CA 90067-2199

EXAMINER
----------

APPIAH, CHARLES NANA

ART UNIT	PAPER NUMBER
----------	--------------

2686

9

DATE MAILED: 01/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/802,296

Applicant(s)

STRATMOEN ET AL.

Examiner

Charles Appiah

Art Unit

2686

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 47-66 is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-46 is/are rejected.
- 7) ☐ Claim(s) 42 and 43 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. In view of the Preliminary Amendment filed on February 21, 2003 (Paper No. 4), the Supplemental Preliminary Amendment filed on July 14, 2003 (Paper No. 7) and the Letter of November 21 (Paper No. 8), the Office Action mailed on November 04, 2003 is hereby vacated and withdrawn.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4, 8, 11, 12, 21, 22, 25, 29, 30, 35 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by **Patel (5,315,636)**.

Regarding claims 1 and 29, Patel discloses a communication device (see Figs. 2-3) comprising: a single high-powered forward channel transmitter (64) base station (primary base station 28rp), at least one wireless communications device comprising a flexible smart card (26) having dimensions similar to the length, width and thickness of a credit card (see col. 8, lines 53-56), the at least one device having components embedded within, including: a receiver (96), an embedded antenna (102), a man machine interface (88, 90), a processor (78) and power supply (battery), wherein the at least one wireless communications device communicates with the base station (see col. 11, lines 56-64).

Regarding claim 2, Patel further teaches the base station comprises a receiver (66, Fig. 2), which meets the limitation of a high temperature superconductivity receiver.

Regarding claims 4 and 30, Patel further shows wherein the at least one wireless communications device further comprises a transmitter (TX 94, Fig. 3).

Regarding claim 8, Patel further teaches wherein the man machine interface comprises a display (88).

Regarding claims 11 and 35, Patel further teaches wherein the man machine interface comprises at least one pushbutton (see col. 11, lines 20-28).

Regarding claims 12 and 36, Patel further discloses wherein the power supply comprises a primary battery (battery, Fig. 3).

Regarding claim 21, Patel further discloses wherein the at least one wireless communications device is structurally flexible (feature of device being credit-card sized which can be carried by the subscriber in a wallet, purse or briefcase or clipped to the subscriber's clothing like a security badge, col. 8, lines 53-56).

Regarding claim 22, Patel further discloses that the wireless communication device and the base station can communicate within a range of about 30 kilometers (see col. 6, line 52 to col. 7, line 12).

Regarding claim 25, Patel shows the exchange of signals between the base station and the personal communication device capability (see Fig. 1), and inherently teaches the base station transmits an interrogation signal to a remote transponder with the transponder responding with an answerback (see col. 6, lines 27-33).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-7, 10, 13-16, 23, 26-28, 31-33, 37-39, 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Patel (5,315,636)**.

Regarding claim 5, Patel discloses all of the limitations of claim 1, but does not specifically disclose that the receiver comprises a frequency shift-keying receiver.

Examiner takes Official Notice that is very well known in the art that frequency shift keying receivers have high immunity to noise and interference and as such it would have been obvious to one of ordinary skill in the art to modify Patel such that the receiver is a frequency shift keying receiver for the benefit of providing high immunity to noise and interference.

Regarding claims 6, 7, 31 and 32, Patel meets all limitations as applied above to claims 1 and 29, but fails to explicitly teach that the receiver utilizes frequency shift keying, or a direct sequence spread spectrum receiver and that the direct sequence spread spectrum modulator comprises differential phase shift keying.

However, it is very well known in the art that direct sequence spread spectrum communication is highly resistant to RF interference, fading, multi-path, and jamming, and that direct sequence spread spectrum modulation techniques using phase shift keying provides a low error rate and is simple to implement..

Examiner takes Official Notice that it would have been obvious to one of ordinary skill in the art to modify Patel, such that the receiver comprises a direct sequence spread spectrum modulator using differential phase shift keying, in order to provide communication, which is highly resistant to RF interference, fading, multi-path and jamming which is easy to implement and has low error rate.

Regarding claims 10 and 33, Patel's display (88) is capable of displaying textual information (see col. 11, lines 11-19). Patel fails to specifically disclose that the display is also capable of displaying graphical information.

However, examiner takes Official Notice that it is very well known in the art to provide telephone displays having graphical information display capability and as such it would have been obvious to one of ordinary skill in the art to modify Patel's telephone such that the display is capable of displaying graphical information, in order to provide more information and options to a user.

Regarding claims 13-15 and 37-39, Patel meets all limitations as applied to claims 12 and 36 above, but does not specifically teach that the primary battery is a lithium non-rechargeable battery and that the power supply comprises a secondary battery, which is a lithium rechargeable battery.

However, it is a very well known practice in the art that a lithium battery is light weight and has good conductivity and high voltage and also it is known in the art to provide secondary or back-up rechargeable sources of power to portable communications device in order to keep the device powered when a primary power supply fails, and as such it would therefore have been obvious to one of ordinary skill in

Art Unit: 2686

the art to use a primary power source such as a lithium non-rechargeable battery as well as a secondary battery in order to provide a power source which is light, has good conductivity and high voltage and also provision of backup power in case the primary power source fails in the system of Patel.

Regarding claims 16 and 40, Patel fails to teach that the power supply comprises a constant current source charger.

Examiner takes Official Notice that it is known in the art to provide a charger to constantly keep a secondary power source supplied and a low dropout analog regulator to extend the life of a battery.

Therefore it would have been obvious to one of ordinary skill in the art to modify Patel, such that the power supply comprises a low dropout analog regulator in order to extend the life of the battery for powering the electronic device.

Regarding claims 23 and 28, Patel fails to disclose that the base station is located in an aircraft, wherein the aircraft is a remote controlled drone flying within 30 miles of at least one wireless communication device. However, it is very well known in the art to use satellite base stations to provide coverage to wireless telephones in remote and secluded areas.

It would therefore have been obvious to one of ordinary skill in the art to locate a base stations in any limited area such as in an aircraft, in order to provide communications capability within a desired limited area such as in a drone aircraft covering a predefined area.

Regarding claims 26, 27, and 41, Patel teaches that, combining the phone device's wireless communications with the convenience and versatility of a credit card and which can provide several functions (see col. 8, lines 53-57). Patel, however, fails to specifically teach that the credit card-sized wireless communication system has a length of about 9.6cm, a width of about 6.4cm and a thickness of about 0.79mm

However, since Patel teaches a single conveniently carried device that combines the versatility of a credit card and performs several major functions, it would have been obvious to one of ordinary skill in the art to provide the conveniently carried credit card-sized device with any convenient dimensions subject to design and circuit constraints.

6. Claims 9 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Patel** as applied to claim 8 above, and further in view of **Cheung et al.** (6,541,908).

Regarding claims 9 and 34, Patel discloses a liquid crystal display (see col. 11, lines 11-19), but fails to teach that the display is a thin polymer emissive display.

Cheung discloses the manufacture of electronic light emissive displays. According to Cheung combining an emissive display in which the light emitting medium comprises a light emitting organic polymer (see col. 10, lines 25-53), with control electronics is particularly useful for miniature display applications which provides high resolution and low cost particularly desired for wireless or mobile applications where low power and high efficiency can minimize weight and increase battery life (see col. 4, lines 5-37).



It would therefore have been obvious to one of ordinary skill in the art to provide the organic polymer emissive display application as the display in Patel's communication device in order to have a miniature display with high resolution and low cost as taught by Cheung

7. Claims 17, 18, 19 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Patel** as applied to claim 1 above, and further in view of **Spall et al. (6,097,934)**.

Regarding claims 17, 18, 19 and 44 Patel further shows an antenna (102) affixed to at least one of a front side and backside of the smart card (see Fig. 3), but does not specifically disclose that the antenna is either a monopole, dipole or patch antenna.

Spall discloses that monopole, dipole and patch antennas are all suitable for use with radiotelephones (see col. 5, lines 31-41).

It would therefore have been obvious to one of ordinary skill in the art to modify Patel with Spall's antennas such that the antenna is either a monopole, dipole or patch antenna, in order to provide a suitable antenna as desired by the portable device application.

8. Claims 20 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Patel** as applied to claims 1 and 29 above, and further in view of **Puthuff (6,112,103)** and **Jarger (4,293,818)**.

Regarding claims 20 and 45, Patel does specifically disclose a microphone, which is a MEMS microphone.

Puthuff discloses a personal communication device that includes voice response architecture and a microphone (see voice recognition command manager, Fig. 4, col. 6, lines 3-57).

It would therefore have been obvious to one of ordinary skill in the art to modify Patel with Puthuff's voice recognition capability, such that the device has a voice response capability in order to provide a user with optional convenient method for entering information into the device.

The combination of Patel and Puthuff fail to teach that the device comprises an integrated broadband processor.

Jarger teaches a frequency modulation detection system that includes a broadband processor (55), which may be used for improving the shape of signal pulses in a frequency shift keying system (see Fig. 2, col. 4, lines 39-43).

It would therefore have been obvious to one of ordinary skill in the art to implement the combination of Patel and Puthuff using broadband processing as taught by Jarger in order to improve the shape of signal pulses of frequency shift keying.

9. Claims 24 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Patel** as applied to claims 1 and 29 above, and further in view of **Dennison et al. (5,235,633)**.

Regarding claims 24 and 46, Patel fails to teach that the wireless communications device receives its location from GPS and uploads the location information to the base station.

Dennison discloses a wireless telephone that receives its location from a GPS system and uploads the location information to a base station, for the purpose of handing off the telephone to a cell site that is the most appropriate for its location (see abstract).

It would therefore have been obvious to provide GPS for providing location that is uploaded to a base station for the benefit of handing off the device to a cell site that is appropriate and provides good quality communications.

#### ***Allowable Subject Matter***

10 Claims 47-66 are allowed.

11 Claims 42 and 43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cardullo et al. (3,713,148) discloses a transponder apparatus having a base station that exchanges interrogation signals with a remote transponder. Alameh et al. (6,348,897) discloses a multi-function antenna system for a credit-card size radiophone.

Akiyama et al. (4,680,785) a personal ID-card type portable device for communicating personal information.

Art Unit: 2686

Mish (6,024,285) discloses a method for forming miniature wireless communication devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Appiah whose telephone number is 703 305-4772. The examiner can normally be reached on M-F 7:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on 703 305-4379. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 306-0377.

CA  
December 05 2003

  
**CHARLES APPIAH**  
**PRIMARY EXAMINER**